



THE UNITED STATES PATENT AND TRADEMARK OFFICE

#18/C
GB 5/10/03

In re Patent Application of

) Art Unit: 2872

Takayoshi HIRAGA et al.

) Examiner: A. Chang

Serial No. 09/582,230

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Filed: July 21, 2000

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For: OPTICAL PICKUP DEVICE USING

)

HOLOGRAM PATTERN AND HOLOGRAM

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PATTERN GENERATING METHOD

)

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with The United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on 5-9-2003

Adrian M. Stamps

AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Official Action dated January 13, 2003, please amend the above-identified application as follows:

IN THE SPECIFICATION:

Please replace the paragraph bridging pages 18 and 19 with the following:

C1
Figs. 6A to 6C are graphs and a diagram illustrating a method of improving tracking servo light spots. Light transmitted through the non-diffraction hologram pattern 14 shown in Fig. 2 is used for reading data on a track of the optical disk as well as for tracking servo. A light spot 24 as a tracking servo light spot is required to have a uniform intensity over the whole area of the spot. However, as shown in Fig. 6A, the intensity distribution of light incident upon the non-diffraction hologram pattern 14 of the hologram module 13 from the real laser light source 11 has a mountain shape with an apex at its center. This intensity distribution can be improved by using a phase hologram pattern. Namely, the deeper the groove of a phase hologram pattern, the more the amount of non-diffraction light (0-th order light) can be reduced and the more the diffraction light amount can be increased by using the reduced amount of non-diffraction light as the diffraction light. Further, the more the width of a valley (groove) is

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